

The American Journal of Clinical Nutrition

A JOURNAL REPORTING THE PRACTICAL APPLICATION OF OUR WORLD-WIDE KNOWLEDGE OF NUTRITION

VOLUME 3

1955

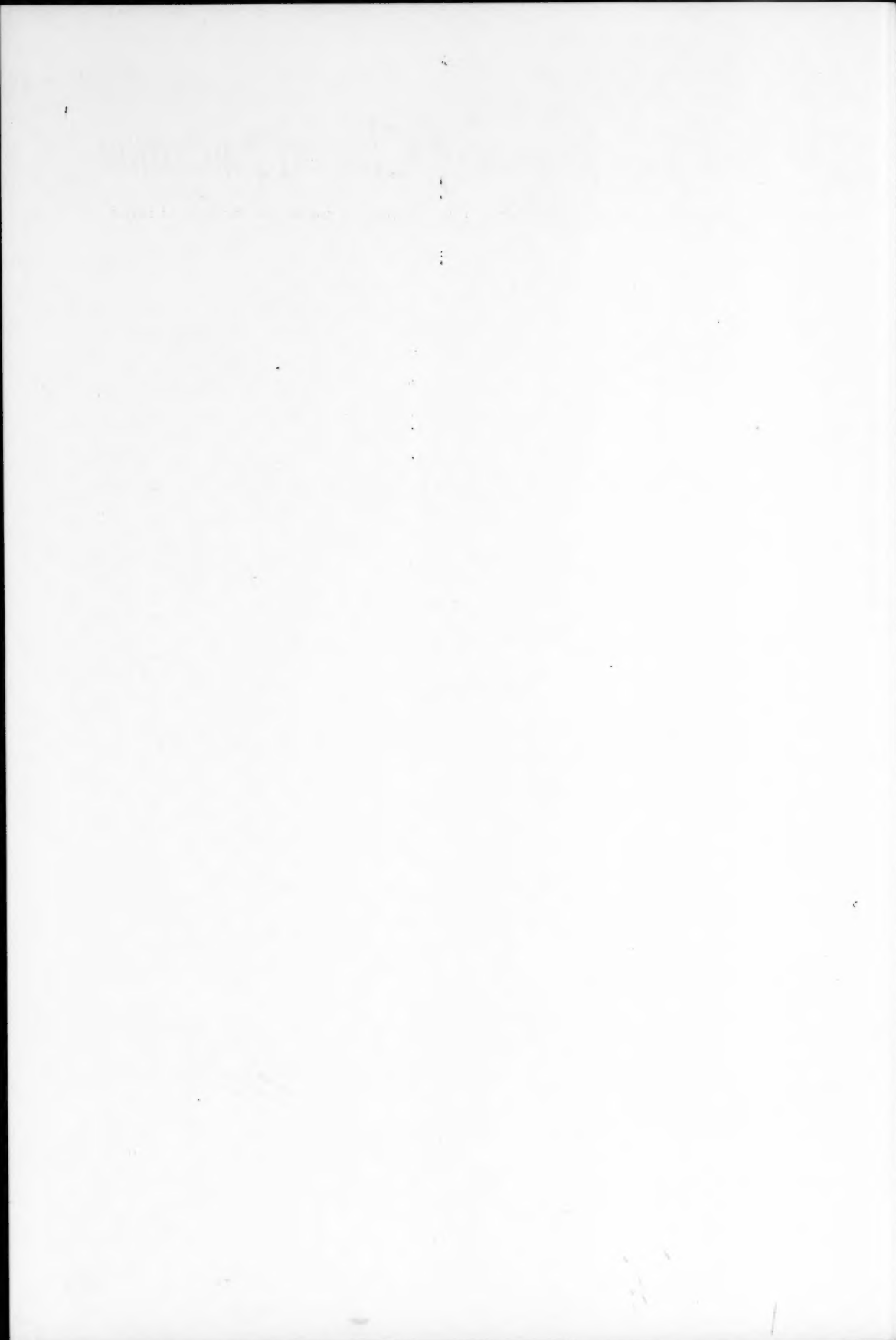
Index

PUBLISHED BY

THE AMERICAN JOURNAL OF CLINICAL NUTRITION, INC.

49 West 45th Street

New York 36, New York



I
A
A
A
T
I
I
I
C
I
C
E
E
E
D
D
A
M
E

The American Journal of Clinical Nutrition

January-February 1955

No. 1

SYMPOSIUM ON NUTRITIONAL ASPECTS OF BLOOD FORMATION:

INTRODUCTION

THE IMPORTANCE OF NUTRITIONAL FACTORS IN THE PATHOGENESIS OF IRON-DEFICIENCY ANEMIA

THE RELATIONSHIP OF COPPER, COBALT, AND OTHER TRACE ELEMENTS TO HEMOPOIESIS

SOME METABOLIC INTERRELATIONSHIPS OF FOLIC ACID, VITAMIN B₁₂, AND ASCORBIC ACID

INTERRELATIONSHIPS OF FOLIC ACID, VITAMIN B₁₂, AND ASCORBIC ACID IN PATIENTS WITH MEGALOBLASTIC ANEMIA

THE ABSORPTION AND UTILIZATION OF VITAMIN B₁₂

RELATIONSHIPS OF HORMONES TO THE UTILIZATION OF ESSENTIAL NUTRIENTS IN ERYTHROPOIESIS

ANTIMETABOLITES AND ANTIBIOTICS AS TOOLS FOR RESEARCH ON BLOOD FORMATION

STERCIBILIN AND HEMATOPOIESIS

ESSENTIAL NUTRIENTS IN THE MANAGEMENT OF HEMATOPOIETIC DISORDERS OF HUMAN BEINGS: A RÉSUMÉ

DIETOTHERAPY: INFANT NUTRITION

DEPARTMENTS

ABSTRACTS OF CURRENT LITERATURE: NUTRITION AND RENAL FUNCTION; HORMONES AND NUTRIENTS; CHOLESTEROL; ATHEROSCLEROSIS; DIETARY EVALUATION AND SURVEYS; ENERGY REQUIREMENTS; LIPOIC (THIOCTIC) ACID; VITAMINS B₁ AND T; ITEMS OF GENERAL INTEREST. 88

Richard W. Vilter.....	1
Carl V. Moore.....	3
George E. Cartwright.....	11
J. N. Williams, Jr.....	20
John F. Mueller and John J. Will.....	30
Robert F. Schilling.....	45
Roger C. Crafts.....	52
Thomas H. Jukes.....	56
G. Watson James, III.....	64
Richard W. Vilter.....	72
Lee Forrest Hill.....	75
	84

March-April 1955

No. 2

NUTRITION AND PSYCHE WITH SPECIAL REFERENCE TO EXPERIMENTAL PSYCHODIETETICS

DOES A LOW INTAKE OF CALCIUM CAUSE OR PROMOTE THE DEVELOPMENT OF RICKETS?

BIOCHEMICAL AND NUTRITIONAL EFFECTS OF LYSINE-REINFORCED DIETS

ON THE INTRAVENOUS ADMINISTRATION OF CYANOCOBALAMIN

HYPERCHYLOMICRONEMIA AND HYPERCHOLESTEROLEMIA: THEIR CORRELATION WITH CLINICAL ATHEROSCLEROSIS

EFFECT OF A THERAPEUTIC REGIME ON HYPERCHYLOMICRONEMIA AND HYPERCHOLESTEROLEMIA

EDITORIALS: HUMAN PANTOTHENIC ACID DEFICIENCY NUTRITIONAL ETYMOLOGY

DIETOTHERAPY: NUTRITION AND THE PRESCHOOL CHILD

DEPARTMENTS

ABSTRACTS OF CURRENT LITERATURE: NUTRITION AND THE LIVER; CALCIUM METABOLISM; LIPODYNAMICS; VITAMIN B₁₂; NUTRITIONAL FACTORS IN ANEMIA; PROTEIN SYNTHESIS AND DEGRADATION; PYRIDOXINE METABOLISM; ITEMS OF GENERAL INTEREST. 163

Josef Brožek.....	101
A. R. P. Walker.....	114
Anthony A. Albanese, Reginald A. Higgons, Gertrude M. Hyde, and Louise Orto	121
Samuel Goldblatt.....	129
Thaddeus D. Labecki.....	132
Thaddeus D. Labecki, I. B. Bright, W. W. Lake, and C. C. Thompson....	141
S. O. Waife.....	148
Lorraine Weng.....	150
	151

May-June 1955

No. 3

CLINICAL ASPECTS OF THE METABOLIC RESPONSE TO TRAUMA

ENLARGEMENT OF THE PAROTID GLAND IN MALNUTRITION

THE HUMAN REQUIREMENT FOR IODINE

THE EFFECT OF SUPPLEMENTS OF ANIMAL AND VEGETABLE PROTEIN, VITAMIN B₁₂, AND AUREOMYCIN ON HEMATOLOGICAL VALUES IN CENTRAL AMERICAN SCHOOL CHILDREN

LACK OF EFFECT OF A HIGH FAT INTAKE ON SERUM LIPID LEVELS

POSSIBLE SOURCES OF PROTEINS FOR CHILD FEEDING IN UNDER-DEVELOPED COUNTRIES

EDITORIALS: NIACIN-TRYPTOPHAN RELATIONSHIPS IN THE DEVELOPMENT OF PELLAGRA
SIR EDWARD MELLANBY (1885-1955)

LETTER TO THE EDITOR: HIGH FAT-HIGH PROTEIN DIETS

DIETOTHERAPY: NUTRITION OF CHILDREN DURING THEIR SCHOOL YEARS

DEPARTMENTS

ABSTRACTS OF CURRENT LITERATURE: NUTRITION AND THE HEART; MIND AND METABOLISM; NUTRITION IN INFANCY; NUTRITION IN THE OLDER CHILD; SCURVY, ASCORBIC ACID, AND STRESS

W. H. Taylor..... 181

Harold R. Sandstead, Carl J. Koehn,
and Stuart M. Sessoms..... 198

Isidor Greenwald..... 215

Francisco Aguirre and Nevin S. Scrimshaw 225

George V. Mann..... 230

M. Autret and A. G. van Veen..... 234

M. K. Horwitt..... 244

A. P. Meiklejohn..... 246

Laurance W. Kinsell and George D. Michaels 247

Anna de Planter Bowes..... 254

..... 259

..... 260

July-August 1955

No. 4

SYMPOSIUM ON THE ANTIMETABOLITES—THEIR MODES OF ACTION AND THERAPEUTIC IMPLICATIONS:

INTRODUCTION

THIAMINE ANTAGONISTS

RIBOFLAVIN ANTAGONISTS

VITAMIN B₆ ANTAGONISTS

PANTOTHENIC ACID ANTAGONISTS

A NATURALLY OCCURRING ANTIMETABOLITE OF METHIONINE IN THE CAUSATION OF A DISEASE

FOLIC ACID ANTAGONISTS

PURINE AND PYRIMIDINE ANTAGONISTS

ANTI-VITAMIN E STRESS FACTORS AS RELATED TO FATTY PEROXIDES

EDITORIAL: THE KWASHIORKOR SYNDROME

DIETOTHERAPY: THE SODIUM-RESTRICTED DIET

DEPARTMENTS

ABSTRACTS OF CURRENT LITERATURE: VITAMIN A METABOLISM; RIBOFLAVIN METABOLISM; NOTES ON FOLIC ACID; ITEMS OF GENERAL INTEREST

Robert S. Goodhart..... 271

Leopold R. Cerecedo..... 273

John P. Lambooy..... 282

W. W. Umbreit..... 291

O. D. Bird, E. L. Wittle, R. Q. Thompson,
and Virginia Mims McGlohon.... 298

D. W. Woolley..... 305

Joseph H. Burchenal..... 311

George H. Hitchings..... 321

Edwin L. Hove..... 328

Grace A. Goldsmith..... 337

Corinne H. Robinson..... 339

..... 344

..... 351

September-October 1955

No. 5

NUTRITION AS A FACTOR AGAINST ADDICTION

HUMAN DIETARY DEFICIENCY OF VITAMIN B₁₂

F. Verzár..... 363

Frank Wokes, J. Badenoch, and H. M. Sinclair 375

THE ROLE OF VITAMIN B ₁₂ IN HUMAN NUTRITION	Frank Wokes and C. W. Picard.....	383
REPRODUCTION AND OBESITY	E. M. Widdowson.....	391
BLOOD LIPID LEVELS AS INFLUENCED BY WEIGHT REDUCTION IN MEN	N. S. Moore, J. H. Fryer, C. M. Young, and L. A. Maynard.....	397
SOME RELATIONS BETWEEN BODY WEIGHT, BODY FAT, AND CALORIE INTAKE	Morton I. Grossman and Harry S. Sloane	403
SERUM VITAMIN A LEVEL: A CRITIQUE OF METHODS AND SIGNIFICANCE	W. O. Caster and Olaf Mickelsen.....	309
ENDOGENOUS CALCIUM IN THE FECES OF ADULT MAN AND THE AMOUNT OF CALCIUM ABSORBED FROM FOOD	Constance L. Brine and Frances A. Johnston	418
EDITORIAL: DO OUR PATIENTS UNDERSTAND US?	S. O. Waife.....	421
DEPARTMENTS		429
ABSTRACTS OF CURRENT LITERATURE: ALCOHOL AND ALCOHOLISM; REGULATION OF CHOLESTEROL LEVELS; GERIATRIC NUTRITION; LIVER DISEASE AND NUTRITION; CHOLINE METABOLISM; ITEMS OF GENERAL INTEREST.....		433

November-December 1955

No. 6

SYMPOSIUM ON NUTRITION IN SURGERY:		
INTRODUCTION	I. S. Ravdin.....	447
PRINCIPLES OF SURGICAL NUTRITION	Roger D. Williams and Robert M. Zoll- inger	449
NUTRITIONAL EVALUATION DURING THE ALTERED PHYSIOLOGICAL STATE AFTER INJURY	John M. Howard.....	456
NUTRITION AND WOUND HEALING	Paul Mecray, Jr.....	461
SUPPLEMENTATION OF PROTEIN AND CALORIC NEEDS IN THE SURGICAL PATIENT	Harold G. Barker.....	466
THE JUDICIOUS USE OF SALINE AND GLUCOSE SOLUTIONS BEFORE AND AFTER SURGICAL OPERATIONS	James D. Hardy.....	473
JEJUNAL FEEDING	Thomas E. Machella and Robert G. Ravdin	481
SOME ASPECTS OF NUTRITION IN PEDIATRIC SURGICAL PATIENTS	C. Everett Koop and R. W. Paul Mell- ish	487
SURGERY OF THE DIABETIC PATIENT: CHANGING CONCEPTS	Walter M. Bortz, II and Edward L. Bortz	494
NUTRITIONAL REHABILITATION OF THE ELDERLY PATIENT UNDERGOING SURGERY	Harold A. Zintel.....	501
EDITORIALS: THE STRUCTURE OF VITAMIN B ₁₂ VITAMINS—FOODS OR DRUGS	S. O. Waife.....	511
LETTER TO THE EDITOR: PERSONAL EXPERIENCE WITH PAROTID ENLARGEMENT	E. M. Nelson.....	511
DEPARTMENTS	Frederick Hoelzel.....	513
ABSTRACTS OF CURRENT LITERATURE: OBESITY; FAT METABOLISM; VITAMIN B ₁₂ ; DIABETES; CARBOHYDRATE METABOLISM; INSULIN; ITEMS OF GENERAL INTEREST.....		516
INDEX TO VOLUME 3.....		521
		543

Author Index

- Aguirre, Francisco, 225
 Albanese, Anthony A., 121
 Autret, M., 234
 Badenoch, J., 375
 Barker, Harold G., 466
 Bird, O. D., 298
 Bortz, Edward L., 494
 Bortz, Walter M., II, 494
 Bowes, Anna de Planter, 254
 Bright, I. B., 141
 Brine, Constance L., 418
 Brožek, Josef, 101
 Burchenal, Joseph H., 311
 Cartwright, George E., 11
 Caster, W. O., 409
 Cerecedo, Leopold C., 273
 Crafts, Roger C., 52
 Fryer, J. H., 397
 Goldblatt, Samuel, 129
 Goldsmith, Grace A., 337
 Goodhart, Robert S., 271
 Greenwald, Isidor, 215
 Grossman, Morton I., 403
 Hardy, James D., 473
 Higgons, Reginald A., 121
 Hill, Lee Forrest, 75
 Hitchings, George H., 321
 Hoelzel, Frederick, 513
 Horwitt, M. K., 244
 Hove, Edwin L., 328
 Howard, John M., 456
 Hyde, Gertrude M., 121
 James, G. Watson, III, 64
 Johnston, Frances A., 418
 Jukes, Thomas H., 56
 Kinsell, Laurance W., 247
 Koehn, Carl J., 198
 Koop, C. Everett, 487
 Labekki, Thaddeus D., 132, 141
 Lake, W. W., 141
 Lambooy, John P., 282
 Machella, Thomas E., 481
 Mann, George V., 230
 Maynard, L. A., 397
 McGlohon, Virginia Mims, 298
 Meccray, Paul, Jr., 461
 Meiklejohn, A. P., 246
 Mellish, R. W. Paul, 487
 Michaels, George D., 247
 Mickelsen, Olaf, 409
 Moore, Carl V., 3
 Moore, N. S., 397
 Mueller, John F., 30
 Nelson, E. M., 511
 Orto, Louise, 121
 Picard, C. W., 383
 Presson, Leila F., 423
 Ravdin, I. S., 447
 Ravdin, Robert G., 481
 Robinson, Corinne H., 339
 Sandstead, Harold R., 198
 Schilling, Robert F., 45
 Scrimshaw, Nevin S., 225
 Sessoms, Stuart M., 198
 Sinclair, H. M., 385
 Sloane, Harry S., 403
 Taylor, W. H., 181
 Thompson, C. C., 141
 Thompson, R. Q., 298
 Umbreit, W. W., 291
 Van Veen, A. G., 234
 Verzar, F., 363
 Vilter, Richard W., 1, 72
 Waife, S. O., 148, 421, 511
 Walker, A. R. P., 114
 Weng, Lorraine, 150
 Widdowson, E. M., 391
 Will, John J., 30
 Williams, J. N., Jr., 20
 Williams, Roger D., 449
 Wittle, E. L., 298
 Wokes, Frank, 375, 383
 Woolley, D. W., 305
 Young, C. M., 397
 Zintel, Harold A., 501
 Zollinger, Robert M., 449

Subject Index

(A) Abstracts

- Abstracts, grouped by subject:
 Alcohol and Alcoholism, 433
 Calcium Metabolism, 165
 Carbohydrate Metabolism, 534
 Cholesterol, 90, 436
 Choline Metabolism, 445
 Diabetes, Nutritional and Metabolic Aspects of, 531
 Diet, Serum Lipids, and Atherosclerosis, 92
 Dietary Evaluation and Surveys, 95
 Energy Requirements, 96
 Fats, Digestion and Absorption of, 525
 Folic Acid, Notes on, 356
 General Interest, Items of, 99, 177, 356, 446, 539
 Geriatric Nutrition, 438
 Hormones and Nutrients, 89
 Insulin as a Nutritional Factor, 538
 Lipodynamics, 167
 Lipoic (Thioctic) Acid, 97

(E) Editorial

- Liver Disease and Nutrition, 442
 Mind and Metabolism, 261
 Nutrition and the Heart, 260
 Nutrition and the Liver, 163
 Nutrition and Renal Function, 88
 Nutrition in Infancy, 263
 Nutrition in the Older Child, 265
 Nutritional Factors in Anemia, 171
 Obesity: Current Theories and Observations, 521
 Protein Synthesis and Degradation, 173
 Pyridoxine Metabolism, 175
 Riboflavin Metabolism, 354
 Scurvy, Ascorbic Acid, and Stress, 267
 Vitamin A Metabolism, 351
 Vitamin B₁₂, 169, 528
 Vitamins B₇ and T, 98
 Addiction, nutrition and, 363ff.
 Adrenalectomy, anemia after, 53
 Alcohol, 433 (A)

(L) Letter to the Editor

- intravenous, 192, 509
 Alkalosis, treatment of, 508
 Amino acid(s) (see also individual acids)
 composition of protein-rich foods, 240-243
 plasma levels in malnutrition, 122
 requirements of infants, 240-243
 of young adults and infants, 122-123
 sulfur-containing, vitamin B₁₂ and, 384ff.
 Amenorrhea, in vitamin B₁₂ deficiency, 377
 Aminopterin (see also folic acid antagonists) 57-59, 70-71, 311
 Androgens, erythropoiesis and, 52-53, 74
 Anemia(s), differential diagnosis of, 73, 74
 in kwashiorkor, 72
 in panhypopituitarism, 52
 in protein deficiency, 72

- iron-deficiency, nutrition and, 3ff.
blood loss and, 3, 9
molybdenum-iron therapy in, 17
macrocytic, in children, aureomycin supplements in, 225ff.
protein supplements in, 225ff.
vitamin B₁₂ supplements in, 225ff.
tropical, vitamin B₁₂ in, 74
megaloblastic (see also pernicious anemia), antibiotics in, 47, 49
ascorbic acid in, 30ff.
folic acid in, 30ff.
hyperthyroidism and, 47-48
nucleic acid ratios in, 41ff.
nucleoprotein metabolism in, 31-32, 36ff.
nutritional interrelationships in, 30ff.
of infancy, folic acid in, 74
of pregnancy, antibiotics in, 61
folic acid in, 39, 61, 74
methionine and choline in, 39
thymine in, 39
uracil in, 39
microcytic hypochromic, 3ff.
nutritional factors in, 171 (A)
parotid gland enlargement with, 211
pernicious, ascorbic acid in, 34-36
folic acid in, 30, 32-33, 41, 74
stercobilin metabolism in, 67
thymine and thymidine in, 22, 37, 38
uracil in, 37-38
vitamin B₁₂ in, 30, 33, 40-41, 48, 61
fecal, 47
zinc in blood cells in, 17
posthypophysectomy, 16, 52ff.
post-thyroidectomy and -adrenalectomy, 53
post-traumatic, 184-185
Anesthesia, in diabetes, 500
Antagonists (see also antimetabolites)
of folic acid, 56-60, 311ff., 322ff.
in leukemia, 59, 71, 313, 316
of pantothenic acid, 298ff.
of purine and pyrimidine, 321ff.
of pyridoxine, 291ff.
of thiamine, 273ff.
of vitamin E, 328ff.
Antibiotics, "growth effect" of, 60
hematopoiesis and, 60ff.
in megaloblastic anemias, 46, 47, 49-50, 61
Antimetabolites (see also antagonists)
definition, 271, 305
hematopoiesis and, 56ff.
modes of action and therapeutic implications of, 271ff.
Antivitamins (see antagonists, antimetabolites)
Appetite (see also hunger), hunger, and, 370-371
mechanisms of, 103
regulation of, 370
Aquocobalamin (see vitamin B₁₂)
Ascorbic acid, allowance for infants, 81
folic acid, vitamin B₁₂ and, 20ff., 34-36, 73
in iron-deficiency anemia, 5, 6, 18-19
in megaloblastic anemia, 30ff.
scurvy, stress, and, 267 (A)
wound healing and, 461
Atherosclerosis, diet and, 92 (A)
hypercholesterolemia and, 132ff.
hyperchylomicronemia and, 132ff.
lipotropic agents in, 141ff.
serum lipids and, 92 (A), 132ff.
Aureomycin, hematopoietic effect of, 60
supplements to school children, effects on blood of, 225ff.
Azaserine, 325
Behavior, caloric deprivation and, 103-104
glutamic acid and, 107
nutrition and, 101ff.
vitamin deficiencies and, 104-106
Betaine, folic acid, vitamin B₁₂, and, 24, 25
Blood (see also erythropoiesis, hematopoiesis)
findings, in "vegans," 378ff.
in injury, 459
in supplemented children, 225ff.
formation, nutrition and, 1ff.
volume, in surgery of elderly, 504
Book Reviews:
Autret, M., and Baker, M.: *Síndrome Policarencial Infantil (Kwashiorkor) and its Prevention in Central America*, 160
Baker, A. Z.: *Vitamins in Nutrition and Health*, 87
Brimley, R. C., and Barrett, F. C.: *Practical Chromatography*, 349
Davidson, J. N.: *The Biochemistry of the Nucleic Acids* (ed. 2), 348
Fishbein, M. (Ed.): *1955 Medical Progress*, 519
Food and Nutrition Board: *Sodium-Restricted Diets. The Rationale, Complications, and Practical Aspects of their Use*, 348
Frey-Wyssling, A.: *Submicroscopic Morphology of Protoplasm* (Eng. ed. 2), 87
Gordon, G. S. (Ed.): *Yearbook of Endocrinology*, 519
Harris, L. J.: *Vitamins in Theory and Practice* (ed. 4), 518
Harris, R. S., Marrian, G. F., and Thimann, K. V. (Eds.): *Vitamins and Hormones. Advances in Research and Applications. Vol. XII*, 432
Harrow, B.: *Casimir Funk. Pioneer in Vitamins and Hormones*, 431
Horder, Lord, Dodds, C., and Moran, T.: *Bread. The Chemistry and Nutrition of Flour and Bread with an Introduction to their History and Technology*, 431
Howe, P. S.: *Nutrition for Practical Nurses*, 518
Klaunberg, H. J. (Ed.): *Tea—A Symposium on the Pharmacology and the Physiologic Effects of Tea*, 349
Loewi, O.: *From the Workshop of Discoveries*, 350
Macauley, C.: *Eating Together*, 161
Martin, E. A.: *Robert's Nutritional Work with Children*, 161
Mrak, E. M., and Stewart, G. F. (Eds.): *Advances in Food Research. Vol. V*, 160
Najjar, V. A. (Ed.): *Fat Metabolism. A Symposium on the Clinical and Biochemical Aspects of Fat Metabolism in Health and Disease*, 160
Niles, K. B.: *Food Preparation Recipes*, 162
Payne, A. S., and Callahan, D.: *The Low Sodium Cook Book*, 519
Quartermaster Research and Development Advisory Board: *Methods for Evaluation of Nutritional Adequacy and Status*, 349
Rytand, D. A., and Anderson, J. (Eds.): *Annual Review of Medicine. Vol. 6*, 432
Schiff, L.: *Clinical Approach to Jaundice*, 161
Sebrell, W. H., Jr., and Harris, R. S. (Eds.): *The Vitamins: Chemistry, Physiology and Pathology. Vol. I*, 348; *Vols. II and III*, 431
Sherlock, S.: *Diseases of the Liver and Biliary System*, 518
Solomon, C., Robertson, N. D., and Tekulsky, M. C. (Eds.): *Diet Manual of the Jewish Hospital of Brooklyn*, 348
Thomson, Sir George: *The Foreseeable Future*, 519
Trowell, H. C., Davies, J. N. P., and Dean, R. F. A.: *Kwashiorkor*, 349
West, E. S., and Todd, W. R.: *Textbook of Biochemistry* (ed. 2), 161
Breast feeding, 75ff.
Calcium absorption, 418ff.
vitamin D and, 116
deficiency, assessment of, 114-115
endogenous, in feces, 418ff.
excretion, 418ff.
in human and cow's milk, 79
intake and rickets, 114ff.
metabolism, 165 (A)
requirement, 114, 118
rickets and, 114ff.
Caloric intake, weight, body fat, and, 403ff.
restriction, body fat and, 405
mental effects of, 103-104
nitrogen excretion during, 405
weight and, 405

- Calorie(s) requirements in surgery, 453
supplementation in surgery, 466
of children, 488
- Carbohydrate metabolism, 534(A)
in injury, 458
in formulae for infants, 78
jejunal feeding of, 484
- Carbon tetrachloride, as vitamin E antagonist, 332
- Carnitine, 98 (A)
- Ceruloplasmin, 13-15
- Cheilosis, angular, with parotid gland enlargement, 210
- Children (see also infants)
blood values of, effects of supplementation on, 225ff.
nutrition of, 150ff., 254ff., 265 (A)
obese, growth of, 393
preschool, nutrition of, 150ff.
recommended allowances for, 150-151, 255-256
sample menus for, 151-152
school, nutrition of, 254ff.
sample menus for, 256-257
surgery in, nutritional therapy for, 487ff.
- Chloride, serum and urinary, after trauma, 188-189
- Cholesterol (see also hypercholesterolemia)
serum, high fat-high protein diets and, 247ff. (L)
high fat intake and, 230ff.
in atherosclerosis, 132ff.
in myocardial infarction, 134-136
unsaturated fatty acids and, 252-253
weight reduction and, 397ff.
- Choline (see also lipotropic agents)
folic acid, vitamin B₁₂, and, 24-25, 50-51
in megaloblastic anemia of pregnancy, 39
metabolism, 445 (A)
- Chylomicra (see also hyperchylomiconemia)
atherosclerosis and, 132ff.
myocardial infarction and, 134-137
- Citrovorum factor (see folic acid, folic acid antagonists)
- Cobalt, cyanide uptake and, 383
deficiency, 15, 16
dietary, 16
excess, 16
hematopoiesis and, 15ff.
in anemia, 16, 17
posthypophysectomy (rats), 53-54
in vitamin B₁₂, 15, 16, 383ff.
iron utilization and, 18
polycythemia and, 16, 73
requirement, 16, 19
therapeutic use of, 16, 17, 73
side-effects of, 16, 17
- Coca chewing, nutrition and, 363ff.
- Cocaine (see also coca)
effects of, 366-367
hunger and, 367, 372
- Coccarboxylase (see thiamine)
- Cod liver oil, as vitamin E antagonist, 329
- Copper deficiency (in swine), 11-12
dietary, 13
excretion, 14
fetal stores of, 13
hematopoiesis and, 11ff.
hypocupremia, 15
in mammalian tissue, 12, 13
iron metabolism and, 12
plasma level (see also ceruloplasmin), normal, 13
in disease, 13, 15
requirement (human), 13
therapeutic use of, 15, 73
- Corn, pellagra and, 244 (E)
- o-Cresol esters, as vitamin E antagonists, 331-332
- Cyanide, cobalt and, 383
detoxication, rhodanese and, 383
-thiocyanate metabolism, vitamin B₁₂ and, 383ff.
uptake, vitamin B₁₂ and, 383ff.
- Cyanocobalamin (see vitamin B₁₂)
- Cystathione, 385
- Cysteine, in iron-deficiency anemia, 5
- Dehydration, postoperative, treatment of, 475
pre-operative, treatment of, 474
- De(s)oxyypyridoxine, 292ff.
hematopoiesis and, 60
- Diabetes, 531 (A)
complications of, 494ff.
surgery in, 494ff.
insulin regulation for, 497-498
- Diet(s), calculations for metabolic studies, 426
fluid, 194
high calorie, after trauma, 193-194
high corn, 244 (E)
high fat-high protein, 247ff. (L)
high protein, after trauma, 194
lysine-reinforced, for infants, 121ff.
metabolic, 423ff.
"salt-free," 339ff.
sodium-restricted, 339ff.
- Diet Therapy Department:
Dietary Procedures in the Metabolic Unit, 423
Infant Nutrition, 75
Nutrition and the Preschool Child, 150
Nutrition of Children during their School Years, 254
Sodium-Restricted Diet, The, 423
Dietary surveys, 95 (A)
- Drug(s) addiction, nutrition and, 363ff.
"sulfa," as vitamin E antagonists, 333
vitamins as, 511 (E)
- Editorials:
Do Our Patients Understand Us? 421
Human Pantothenic Acid Deficiency, 148
Kwashiorkor Syndrome, The, 337
Niacin-Tryptophan Relationships in the Development of Pellagra, 244
Nutritional Etymology, 148
Sir Edward Mellanby (1885-1955), 246
Structure of Vitamin B₁₂, The, 511
Vitamins—Foods or Drugs, 511
Electrolytes (see also specific subject)
in geriatric surgery, 491
in pediatric surgery, 507
in trauma, 188
Endocrine glands, reaction to trauma of, 184-185
role in erythropoiesis of, 52ff.
Energy requirements (see also calories), 96 (A)
Erythropoiesis, hormones and nutrients in, 52ff.
pituitary and, 53
thyroxine and, 52, 74
- Fat(s), body, weight, caloric intake and, 403ff.
dietary, atherosclerosis and, 92 (A)
serum lipids and, 230ff.
emulsions, intravenous, 192
in jejunal feeding, 482
in surgery, 470
high—and high protein diets, 247ff. (L)
metabolism, 525 (A)
unsaturated, as vitamin E antagonists, 329-330
vegetable, serum lipids and, 247ff.
- Fatty acids, unsaturated, serum lipid levels and, 252-253
- Feeding(s), intragastric tube, 191-192, 194
intravenous, 192
jejunal, 481ff.
parenteral, 447ff., 487ff.
- Fish flour products, 238-240
- Fluid(s), balance, management of, 473ff.
colloid, 190-191
diets, high protein, 194
for diabetics, 498
for hydration of elderly, 507
loss, after trauma, 181-182
therapy, after trauma, 189-192, 194
- Folacin (see folic acid)
- Folic acid, 356 (A)
antagonists, 56-60, 311ff., 322ff.
in leukemia, 59, 71, 313, 316
ascorbic acid and, 20ff., 34-36, 73
bacterial synthesis of, antibiotics and, 47, 61
deficiency, diaminiopyrimidines and, 322
folic acid and, 20ff., 34
glycine and, 23
histidine and, 25
in achrestic anemia, 74
in megaloblastic anemias, 30ff.
of pregnancy, 39, 74
in pernicious anemia, 30, 32, 33
in sprue, 74
local distillation of, 40ff., 48
nucleic acid synthesis and, 42ff., 60, 72

- nucleoprotein metabolism and, 36ff.
 purines and, 22, 60
 protoporphyrin and, 26
 serine and, 23
 structure, 21
 thymine and, 22, 60
 tryptophan and, 26
 vitamin B₁₂ and, 20ff., 31, 33-36, 388
- Folinic acid, aminopterin-resistance and, 70
 bacterial synthesis, antibiotics and, 47, 61
 diaminopyrimidines and, 322
 folic acid and, 20ff., 34
 homocysteine and, 23
 in pernicious anemia, 34
 purines and, 23
 structure, 21
- Food(s) (see also specific foods)
 attitudes, 102
 calcium absorption from, 418ff.
 culture and, 102
 habits, 102-103
 intake, regulation of, 103, 370, 371-373
 glucostatic theory of, 370
 protein-rich, for underdeveloped countries, 234ff.
 amino acid composition of, 240-243
 selection, for metabolic unit, 423ff.
 social function of, 102
 sodium content of, 339
 symbolism, 102
 vitamins as, 511 (E)
- Formate metabolism, 23, 24
 Formulae, infant, 77-80
 Fructose, intravenous therapy, 192
 in surgery, 479
- Gastrointestinal function after trauma, 185
 Geriatric nutrition, 438 (A)
 in surgery, 501ff.
 "Ginger Paralysis," vitamin E deficiency and, 331
 Glucose, blood, injury and, 457
 surgical diabetics and, 495ff.
 intravenous therapy, 192
 solutions, postoperatively, 473ff.
 in pediatric surgery, 488
 Glutamic acid, behavior and, 107
 intelligence and, 106
 Glycine, conversion to serine, 23
 folic acid, vitamin B₁₂ and, 23, 51
 in protoporphyrin synthesis, 26
 Goiter, iodine intake and, 219-220
 iodized salt and, 220-222
 Growth of infants, lysine in, 121ff.
 of obese children, 393
- Heart (see also myocardial infarction)
 nutrition and, 260 (A)
 Hematopoiesis (see also erythropoiesis)
 antibiotics and, 60-63
 antimetabolites and, 53-60
 desoxyypyridoxine and, 60
 disorders of, nutritional management of, 72-74
 nutrition and, 1ff., 72-74
 sterobilin and, 64ff.
 trace elements and, 11ff.
 Heme (see protoporphyrin)
 Hemoglobin (see blood)
 Hepatolenticular degeneration, hypocupremia in, 15
 Histidine, folic acid and, 25
 Hormone(s), administration after trauma, 192
 adrenocortical, production after trauma, 192
 "erythropoietic" pituitary, hypophysis of, 53
 in erythropoiesis, relation to nutrients, 52ff., 74
 nutrition and, 89 (A)
 Hunger, appetite and, 370-371
 center, hypothalamic, 370ff.
 inhibition of, 363, 367ff., 372
 physiology of, 369ff.
 Hydroxocobalamin (see vitamin B₁₂)
 Hypercholesterolemia, effect of lipotropic agents on, 141ff.
 in atherosclerosis, 132ff.
 in myocardial infarction, 134-136
 Hyperchylomicronemia, effect of lipotropic agents on, 141ff.
 in atherosclerosis, 132ff.
 in myocardial infarction, 134-137
 in older women, 137, 139
 Hypertension, sodium-restricted diet for, 339ff.
 Hyperthyroidism, iodized salt and, 221
 pernicious anemia and, 47-48
 Hypoglycemia, hunger and, 369-370
 Hypoproteinemia, idiopathic, hypocupremia in, 15
 parotid gland enlargement with, 211
 wound healing and, 461
 Hypothalamus, hunger regulation by, 370ff.
 Hypothyroidism, anemia in, 52-53
 Hypophysectomy, anemia after, 52ff.
- Infant(s) (see also children)
 feeding, 75ff.
 "demand," 80
 solid food in, 82-83
 formulae, principles, 77ff.
 carbohydrate in, 78
 standard, 79-80
 water allowance in, 78
 lysine-reinforced diets for, 121ff.
 newborn, hypocupremia in, 15
 nutritional therapy for surgery in, 487ff.
 nutrition, 75ff.
 pyridoxine in, 82
 requirements for, 77ff., 240-243
 for surgery, 487ff.
 vitamin B complex in, 81-82
 obese, growth of, 393
 renal function in, 78, 79, 80
 vitamin allowances for 81ff., 121ff.
- Injury (see trauma)
 Inositol (see lipotropic agents)
 Insulin, 538 (A)
 regulation for surgery in diabetics, 497-498
 Intelligence, glutamic acid and, 106
 Intrinsic factor (see also vitamin B₁₂)
 absorption of vitamin B₁₂ and, 45ff.
 in sprue, 47
 Iodine balance, 215-216
 excretion, 215
 intake, goiter and, 219-220
 requirement, human, 215ff.
 Iodized salt, dangers of, 221
 goiter and, 220-222
 Iron (see also anemia)
 absorption, from foods, 3
 ascorbic acid and, 5, 18, 19, 73
 cysteine and, 5
 gastric acidity and, 5-6
 hydrochloric acid and, 6
 in iron deficiency, 5, 9
 in normal subjects, 4, 6
 balance, 8
 deficiency, 3ff.
 blood loss and, 3, 9
 nutrition and, 3ff.
 excretion, 6
 in feces, 7
 in sweat, 8, 18, 19
 in urine, 8
 metabolism, copper and, 12
 -molybdenum therapy in anemia, 17
 preparations, 73
 Isoniazid, pyridoxine and, 295
 Jejunal feeding, 481ff.
- Kidney (see renal function)
 Kwashiorkor (see also protein malnutrition), 337 (E)
 anemia in, 72
 mental changes in, 108
- Leukemia, folic acid antagonists in, 59, 71, 313-314, 315-316
 treatment of, 313
 Lipid(s) metabolism, 167 (A)
 peroxides, anti-vitamin E stress factors and, 328
 serum, atherosclerosis and, 92 (A), 132ff.
 diet and, 92 (A)
 high fat-high protein diets and, 247 (L)
 high fat intake and, 230ff.
 myocardial infarction and, 133-137
 weight reduction and, 397ff.
 Lipoic acid (see thioctic acid)
 Lipotropic agents, effect of, on atherosclerosis, 141ff.
 on hypercholesterolemia, 141ff.
 on hyperchylomicronemia, 141ff.
 Liver disease, nutrition and, 442 (A), in kwashiorkor, 337 (E)
 function, after trauma, 184, 459
 nutrition and, 163 (A)
 vitamin B₁₂ and, 388

- Lysine-reinforced diets for infants, 121ff.
 requirements of adults and infants, 121
 -tryptophan ratio, 121ff.
- Malnutrition, mental effects of, 108-109, 110-111
 parotid gland enlargement in, 198ff., 514 (L)
 plasma amino acid levels in, 122
 protein, food sources for correction of, 234ff.
- Meal frequency, efficiency and, 107
 size, efficiency and, 107
- Mellanby, Sir Edward (1885-1955), 246 (E)
- Metabolic unit, dietary procedures in, 423ff.
 equipment for, 426
- Metabolism, mind and, 261 (A)
 in trauma, 181ff.
- Methionine (see also lipotropic agents)
 folic acid and, 24, 25
 in megaloblastic anemia of pregnancy, 39
 naturally occurring antimetabolite of, 305ff.
 vitamin B₁₂ and, 24, 25, 384ff.
- Milk, cow's, compared to human, 76-77
 phosphorus in, 79
 homogenized, for tube feeding, 453, 484
 human, 75, compared to cow's, 76-77
 phosphorus in, 79
 in pediatric surgery, 491
 lysine supplementation of, 121ff.
 postoperatively, 453, 484
- Mind, metabolism and, 261 (A)
 nutrition and, 101ff.
- Molybdenum, 17, 19
 -iron therapy in anemia, 17
- Myocardial infarction, lipotropic agents and, 141ff.
 serum lipids and, 133-137
- Neopyrithiamine, 278
- Nephrotic syndrome, hypocupremia in, 15
- Neuritis, vitamin B₁₂ in, 74
- Neuropathy, peripheral, in thiamine deficiency, 104
- Niacin allowance for infants, 81-82
 -tryptophan relationships in pellagra, 244 (E)
- Nicotine, hunger and, 369-370, 372
- Nitrogen, injury and, 456
 in surgery, 469
- Nucleic acid(s), ratios in megaloblastic anemias, 41ff.
 effect of folic acid and vitamin B₁₂ on, 42ff.
- Nucleoprotein(s), metabolism in megaloblastic anemias, 31-32, 36ff.
- Nutrients, essential, in management of hematopoietic disorders, 72-74
- Nutrition (see also specific nutrients)
 addiction and, 363ff.
 after trauma, 191-192
 behavior and, 101ff.
 animal studies of, 109-110
 Briefs, 86, 158, 430, 517
 geriatric, 438 (A)
 in surgery, 501ff.
 heart and, 260 (A)
 hematopoiesis and, 1ff., 72-74
 hormones and, 89 (A)
 in diabetes, 495
 in surgery, 447ff.
 industrial, 107
 iron-deficiency anemia and, 3ff.
 liver and, 163 (A)
 disease and, 442 (A)
 of infants, 75ff., 263 (A)
 of preschool child, 150ff., 265 (A)
 of school child, 254ff., 265 (A)
 pediatric, 75ff., 150ff., 254ff., 263 (A), 265 (A)
 in surgery, 487
 protein sources for, 234ff.
 psyche and, 101ff.
 renal function and, 88 (A)
 role of vitamin B₁₂ in human, 383ff.
- Nutritional etymology, 149 (E)
 Quotes, 84, 156, 346
 terminology, 421 (E)
- Obesity (see also fat, body, and weight), 521 (A)
 cycle, 393-394
 diabetes and, 495ff.
 evaluation of, for surgery, 449
 reproduction and, 391ff.
 weight, fat, and calories, 403ff.
- Oral symptoms, in vitamin B₁₂ deficiency, 377
- Osteomalacia, 117
- Oxythiamine, 278
- Panhypopituitarism, anemia in, 52
- Pantothenic acid, antagonists, 298ff.
 deficiency, human, 148 (E)
- Parenteral feeding, 447ff., 487ff.
- Paresthesia, in vitamin B₁₂ deficiency, 377
- Parotid gland, enlargement in malnutrition, 198ff., 513 (L)
- Peanut presscake flour, 236-237
- Pellagra, niacin-tryptophan relationships in, 244 (E)
- Pellagroid pigmentation, with parotid gland enlargement, 210
- Pemmican, effect on serum lipids of, 230
- Penicillin, hematopoietic effect of, 61
- Personality (see also behavior, mind, intelligence)
 nutrition and, 101ff., 363
- Phosphorus, in human and cow's milk, 79
- Porphyria, stercobilin metabolism in, 67ff.
- Porphyrin(s), synthesis of, 68
- Postoperative care, 447ff.
- Potassium depletion, 509
 imbalance, correction of, 193
 injury and, 456
 serum, after trauma, 189
- Pregnancy, obesity in, 391
- Pre-operative care, 447ff.
- Protein(s), animal, intake of and vitamin B₁₂ deficiency, 375ff.
 antiketotic effects of, 247ff. (L)
 deficiencies, anemia in, 72
 high-high fat diets, 247ff.
 in hematopoiesis, 52, 72
 malnutrition (see also kwashiorkor), food sources for correction of, 234ff.
 metabolism, 173 (A)
 in injury, 458
 sources for child feeding in underdeveloped countries, 234ff.
 supplementation, to school children, effects on blood values, 225ff.
 in surgery, 466, 502
- Protoporphyrin, folic acid, vitamin B₁₂ and, 26
 structure, 26
 synthesis, 68
- Pseudomonas tabaci* toxin, as methionine antimetabolite, 305ff.
- Pulses and fermented milk products, 237-238
- Purine(s) antagonists, 321ff.
 folic acid and, 22, 36, 60
 folinic acid and, 23
 homocysteine and, 23
 structure, 22
- Pyridine, as vitamin E antagonist, 332-333
- Pyridoxine antagonists, 291ff.
 deficiency, 292ff.
 in infant nutrition, 82
 isoniazid and, 295
 metabolism, 175 (A)
- Pyrimidine antagonists, 321ff.
- Psychodietetics, experimental, 101ff.
- Psychology, nutrition and, 101ff.
- Pteroylglutamic acid (see folic acid antagonists)
- Renal function, after trauma, 184
 in infants, 78, 79, 80
 nutrition and, 88 (A)
 postoperative, 475
- Reproduction, obesity and, 391ff.
- Riboflavin allowance for infants, 81
 antagonists, 282ff.
 deficiency (see cheilosis, angular)
 metabolism, 354 (A)
- Rickets, adult (see osteomalacia)
 calcium intake and, 114ff.
 diagnosis of, 114-115
 incidence, 116-117
 radiation and, 117
- Saline solutions, postoperatively, 473ff.
- Salt (see sodium)
 iodized (see iodized salt)

- Scurvy, ascorbic acid, stress and, 267 (A)
- Serine, conversion from glycine, 23
- folic acid, vitamin B₁₂, and, 23
- Shock, in elderly, 510
- Smoking, hunger and, 369-370, 372
- Sodium (see also saline)
- content of foods, 339
- depletion, 509
- restricted diet, 339ff.
- serum and urinary, after trauma, 188-189, 456
- sulfite, as vitamin E antagonist, 333
- Soy products, 235-236
- Spinal cord, changes in vitamin B₁₂ deficiency, 378, 388
- Sprue, copper levels in, 14, 15
- folic acid in, 74
- vitamin B₁₂ absorption in, 47, 50
- Starvation, mental effects of, 101ff., 363
- Stercobilin, hematopoiesis and, 64ff.
- Stress, ascorbic acid, scurvy and, 267 (A)
- Subacute combined degeneration of cord (see spinal cord)
- "Sulfa" drugs, as vitamin E antagonists, 333
- Sulfur cycle, in vitamin B₁₂ metabolism, 386
- Surgery, geriatric, 501ff.
- nutrition and, 447ff.
- pediatric, 487ff.
- Terminology, nutritional, 149 (E), 421 (E)
- Terramycin, hematopoietic effect of, 46, 49
- Tetany, neonatal, 79
- Thiamine allowance for infants, 81
- antagonists, 273ff.
- as antimetabolite, 273ff.
- deficiency, mental effects of, 104-106
- peripheral neuropathy in, 104
- psychomotor deterioration in, 104-105
- signs of accompanying parotid gland enlargement, 210
- pyridine moiety, as vitamin B₆ antagonist, 295
- structure, 273
- supplementation, 106
- Thioctic acid, 97 (A)
- Thiocyanate excretion, vitamin B₁₂ and, 380ff., 384, 385
- in saliva, parotid function and, 204
- Thymidine, folic acid, vitamin B₁₂, and 22
- in pernicious anemia, 22
- Thymine, folic acid and, 22, 60
- in pernicious anemia, 22
- vitamin B₁₂ and, 22
- Thyroidectomy, anemia after, 53
- Thyroxine, erythropoiesis and, 52, 74
- Tic douloureux, vitamin B₁₂ in, 74
- TOCP (see tri-o-cresyl phosphate)
- Trace elements (see also specific elements)
- hematopoiesis and, 11ff.
- Trauma, anemia after, 185, 187
- body fluid changes after, 182
- catabolic phase after, 182
- electrolytes in, 188
- endocrine function after, 184-185
- fluid therapy after, 189-192
- gastrointestinal function after, 185
- high calorie diet after, 193-194
- high protein diet after, 193-194
- liver function after, 194
- metabolic response to, 181ff., 456ff.
- variations in, 185-186
- nutrition after, 191ff.
- physiologic response to, 456ff.
- renal function after, 182-194
- to specific organs, 186
- with infection, 186
- Tri-o-cresyl phosphate, 331
- Tryptophan, folic acid and, 26
- lysine ratio, 121ff.
- metabolism, 26
- niacin—relationships in pellagra, 244 (E)
- Undernutrition (see malnutrition, starvation)
- Uracil, in pernicious anemia, 37ff.
- "Vegans," vitamin B₁₂ deficiency in, 375ff.
- Vitamin(s) allowances for infants, 121ff.
- deficiencies, mental effects of, 104-106
- wound healing and, 463
- foods or drugs, 511 (E)
- jejunal feeding of, 484
- supplementation, to infants, 81-82
- in surgery, 453
- of elderly, 505ff.
- Vitamin A allowance for infants, 81
- deficiency, dark adaptation in, 106
- serum levels in, 414
- metabolism, 351 (A)
- methods for analysis of, 409ff.
- serum level, critique of methods and significance, 409ff.
- in clinical deficiency, 414
- in disease, 415
- in fever, 415
- serum carotenoids and, 414, 416
- Vitamin B complex deficiency, mental effects of, 105, 108
- animal behavior and, 109-110
- in infant nutrition, 81-82
- in nutritional anemia, 72-73
- Vitamin B₁ (see thiamine)
- Vitamin B₂ (see riboflavin)
- Vitamin B₆ (see pyridoxine)
- Vitamin B₁₂, 169 (A), 528 (A)
- absorption, 45ff., 169 (A)
- age and, 46, 49
- antibiotics and, 46, 49-50
- in achlorhydria, 46
- in gastrectomized subjects, 47
- in pernicious anemia, 47
- in sprue, 47, 50
- site of, 47
- aerosol inhalation of, 47
- "animal protein factor" activity of, 383ff.
- ascorbic acid and, 20ff., 34, 35, 36, 73
- chemical forms of, 47
- choline requirement and, 50-51
- cobalt in, 15, 16
- cyanide-thiocyanate metabolism and, 379ff.
- deficiency (see also pernicious anemia), 50-51
- dietary, in humans, 61, 375ff. 384
- biochemical findings in, 377-380
- symptoms of, 377, 378
- excretion of, 45ff.
- folic acid and, 20ff., 31, 32, 33, 34, 388
- glycine and, 23
- in human nutrition, role of, 383ff.
- in megaloblastic anemias, 30ff.
- local instillation of, 40ff.
- in neuritides, 74
- in pernicious anemia, 30, 34, 35, 36, 40ff., 74
- in tic douloureux, 74
- in transsulfuration, 386ff.
- in tropical macrocytic anemia, 74
- intramuscular administration of, 47
- intravenous administration of, 129ff.
- safety of, 129
- liver and, 388
- metabolism, sulfur cycle and, 386
- methionine and, 384ff.
- nasal instillation of, 47
- nucleic acid synthesis and, 42ff. 72
- nucleoprotein metabolism and, 36ff., 39ff.
- oral administration of, 45ff.
- rate of decay of, 47
- requirement in hyperthyroidism, 47-48
- serine and, 23
- serum level in vegans, 377ff.
- hemoglobin and, 378-379
- red blood cell counts and, 378
- thiocyanate ratios and, 380
- tyrosyl derivatives and, 379
- structure of, 511 (E)
- sulfur-containing amino acids and, 384ff.
- supplements to school children, effects on blood values of, 225ff.
- thymidine and, 22
- utilization, 45ff.
- Vitamin B₇ (see carnitine)
- Vitamin C (see ascorbic acid)
- Vitamin D allowance for infants, 81
- calcium absorption and, 116

- Vitamin E antimetabolites, 328ff.
antioxidant action of, 328
deficiency, lipid peroxides and,
328ff.
"ginger paralysis" and, 331
"sulfa" drugs and, 333
- Vitamin T, 98 (A)
- Weight (see also obesity)
birth and subsequent, 393
body fat, calories, and, 403ff.
loss, surgery and, 452
- reduction, effect on blood lipids
of, 397ff.
- Wound(s) (see also trauma)
healing, nutrition and, 461ff.
- Zinc in blood cells, 17
-

